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Donald W. Huntley

**PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN THE APPLICATION OF:

CHARLES F. HARRIS, JR. ET AL

DOCKET NO.: HARRIS-2

SERIAL NO.: 10/734,322

EXAMINER: LAVINDER, JACK W.

FILED: DECEMBER 12, 2003

ART UNIT: 3777

TITLE: VIBRATION DAMPENING DEVICE  
AND METHOD

WILMINGTON, DE

DATE: February 10, 2010

**DECLARATION UNDER 37 C.F.R. 1.132**

CHARLES F. HARRIS, JR. hereby declares THAT:

He is a citizen of the United States of America residing at 181 South du Pont Highway, New Castle, Delaware;

He is an inventor of the invention described and claimed in the above-identified application;

In February 2004, he and John E. Garnier conducted tests to determine the extent to which the devices of the present invention dampen vibrations. The tests were carried out at a U.S. Army National Guard station in New Castle County, Delaware. The tests were done on the undersigned, with and without bands and patches of the present invention and copending application Serial No. 10/7090,903. The positioning of the bands and patches is shown in the attached photograph, identified as Figure 1. In the testing illustrated in the Figure, the arm of the undersigned was subjected to vibration by a vibrator operating at 40 cycles per second imparted by a cam shaft varying 0.5 inch;

A sensor for the vibration was attached to the carpal radial longus muscle above the arm wrap. The results of the vibration frequency were recorded, and illustrated in attached Figure 2. In that figure, the Vibrational Frequency with the bands off is shown in black, while the Vibrational Frequency with the bands or patches on is shown in red. As can be seen from the Figure, a marked decrease in vibration is realized with the bands or patches of the present invention;

The devices of the present invention were also tested on a runner on a treadmill. The treadmill was operated for an average time of 10 seconds in a flat position. The vibration was measured as before, and the results illustrated graphically in Figure 3. There, the results shown for testing at 3 mph and 7 mph are graphically illustrated, the lines with the bands off being shown in red, while the testing with the bands on is reported in black. As can be seen from the graphical data, the devices of the present invention resulted in a marked decrease in vibration in both cases;

The general procedures described above were repeated with the runner on the treadmill operating at 5 mph. These tests were also carried out in New Castle County, Delaware, at a commercial fitness center. The results are graphically illustrated in the accompanying Figure 4. These results demonstrate that the devices of the present invention resulted in a marked decrease in shock and vibration the runner's leg muscles over the frequency range of from 50 Hz to 1200 Hz;

The devices of the present invention were also tested on a horse at Delaware Park, a racetrack in New Castle County, Delaware. A horse there had been lame for 2 weeks. The Declarant fitted the horse with a device of the present invention, and the horse walked without a limp in 2 days;

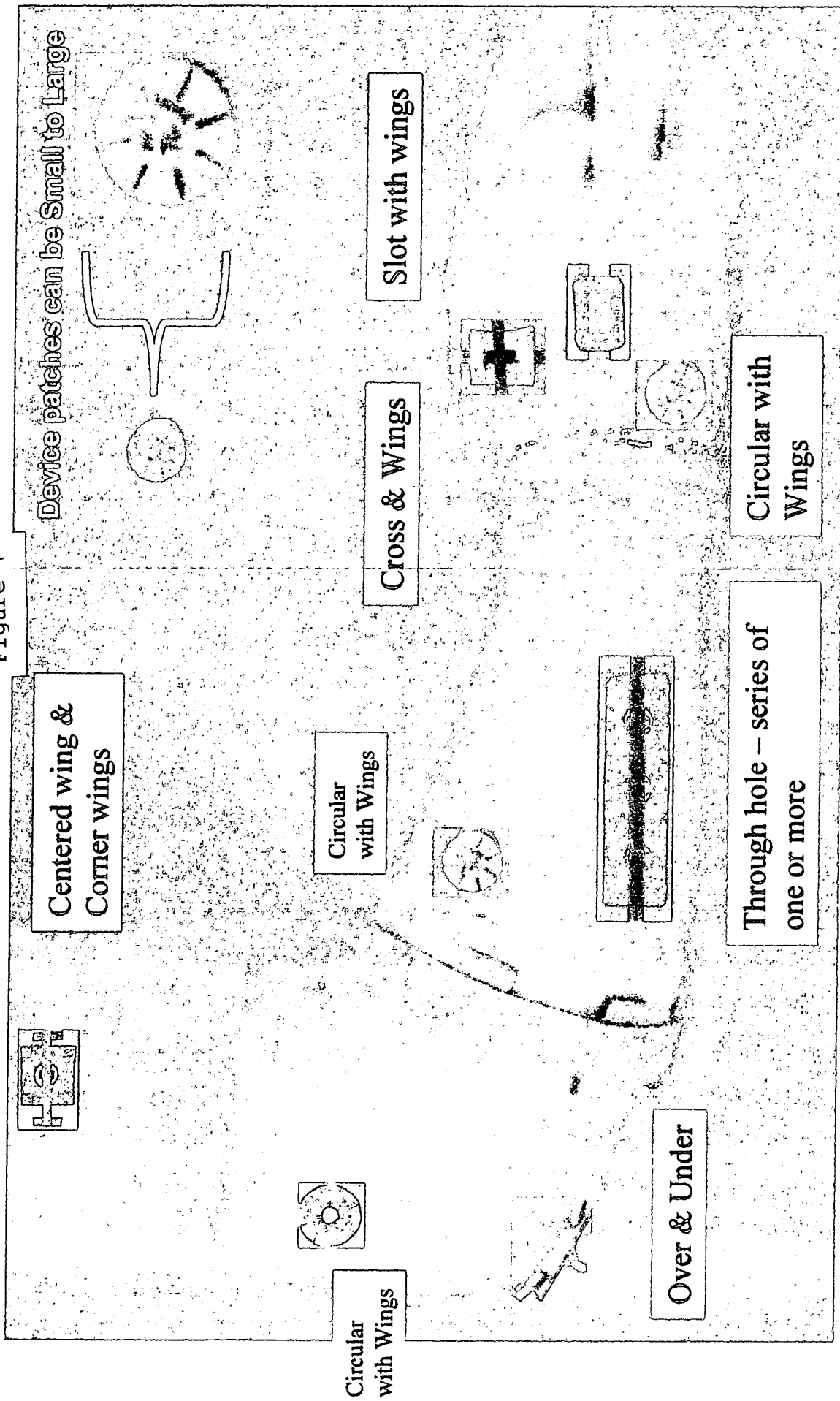
He further declares that all statements made herein are true, all statements made on information and belief are believed to be true, and that these statements are made with the understading that willful false statements and the like so made are punishable by fine, imprisonment, or both under §1001 of Title 18 of the United States Code and that such willful false statements and the like so made may jeopardize the validity of this application and any patent issuing thereon.

**/s/ Charles F. Harris, Jr.**

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Charles F. Harris, Jr.

Figure 1



Vibrational Damping Patches can be placed almost *anywhere* on the body

Charles Harris 02/01/04

Figure 2

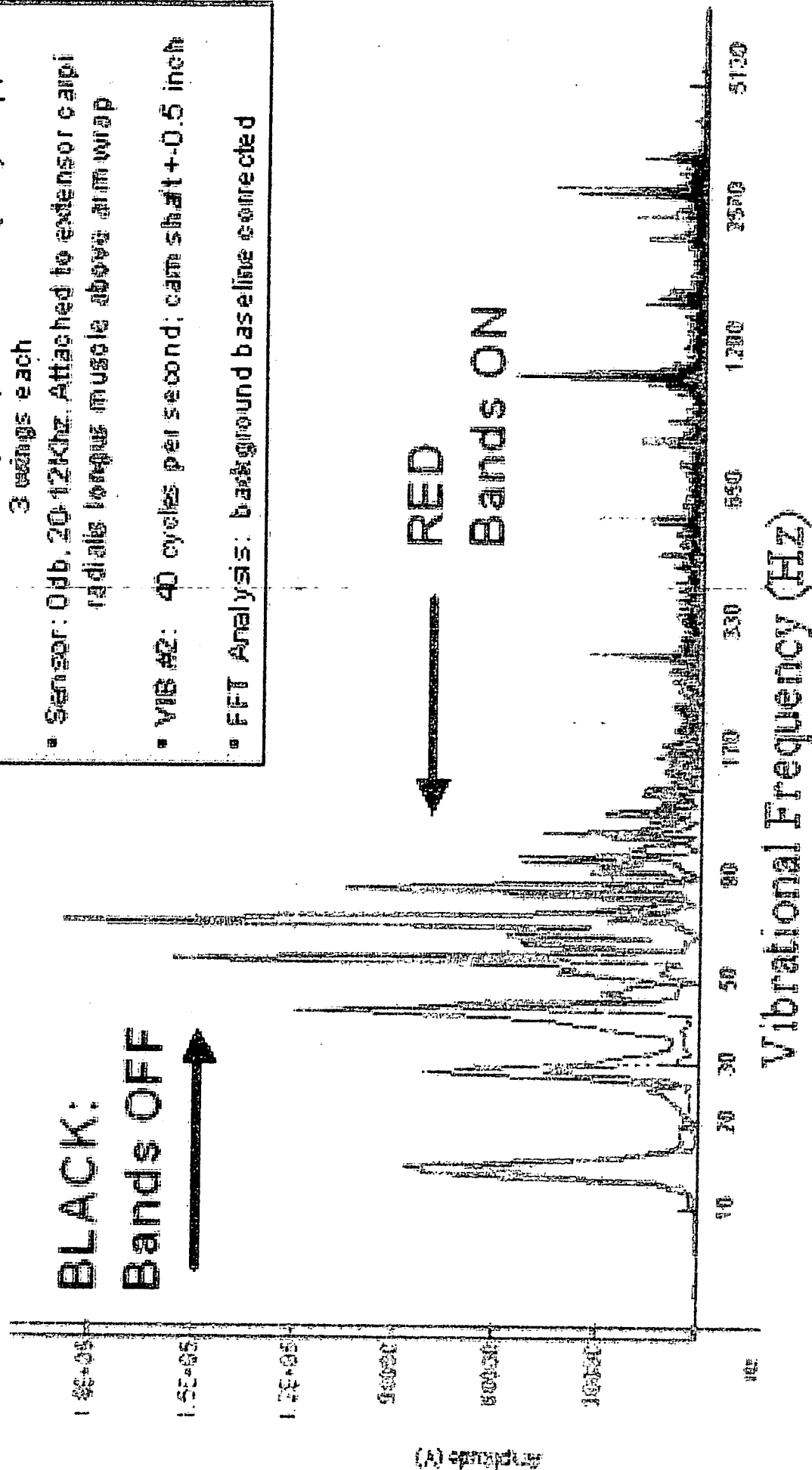
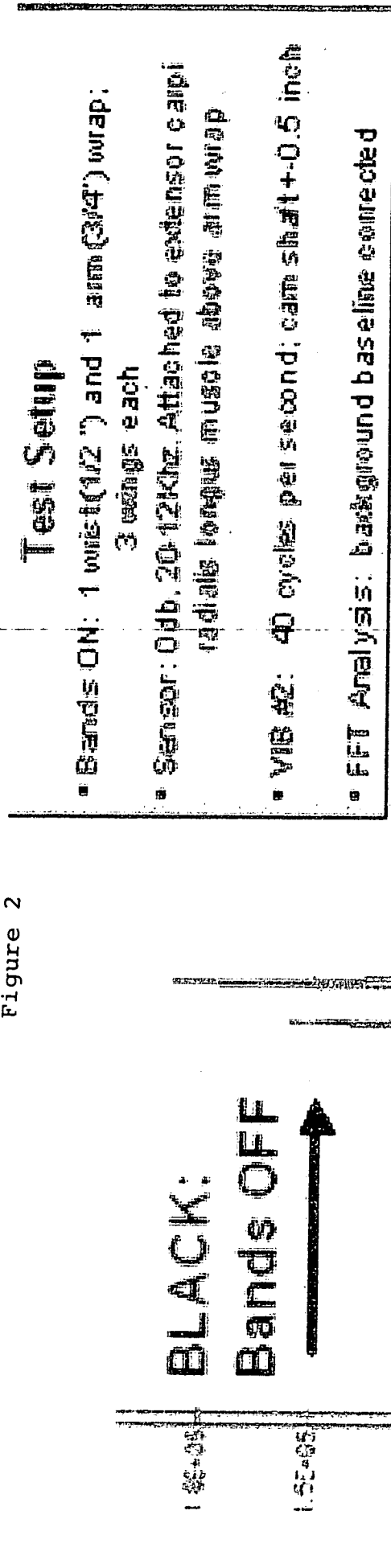
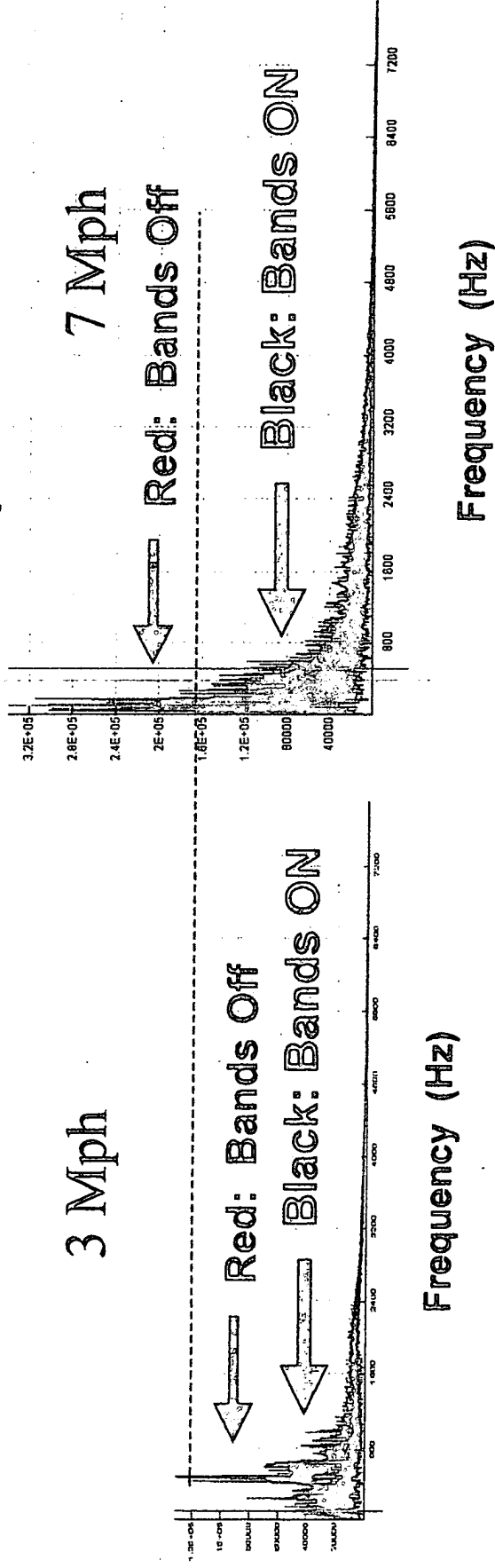


Figure 4. Vibrational Damping using SportsBands™ Muscle Wraps: Comparison of Bands ON and OFF. Vibration Source #2 (VIB#2)

Figure 3

# Testing of "Shock and Vibration" Damping using SportsBands™ Muscle Wraps



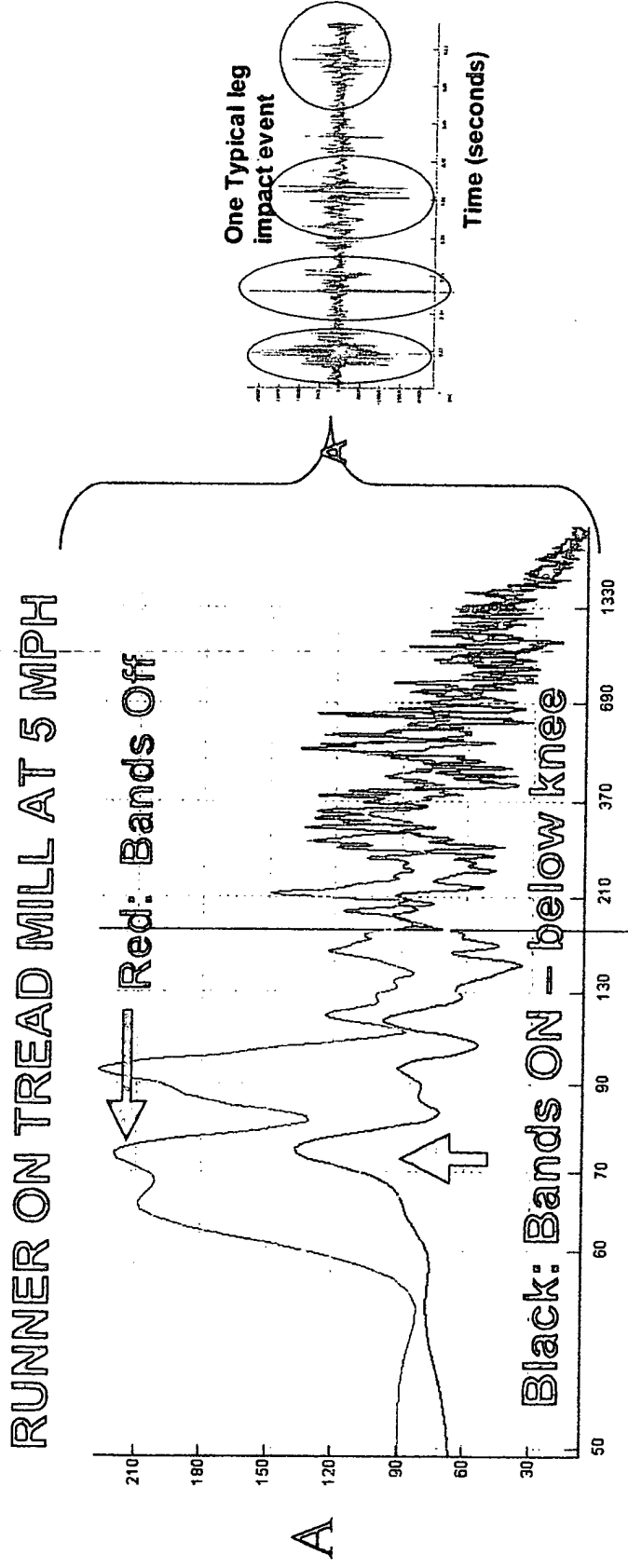
Runner on Tread-mill Test Conditions: Time average: 10 seconds; 0 degree incline; Machine speed: 3 Mph; Sensor placed below knee cap. Band placed 2 inches below knee sensor

Fig 3A and 3B. Compare FFT time data at 3 Mph and 7Mph at same amplitude and frequency scales

Tests results at 3, 5 and 7 MPH Running Speeds show SportsBands™ devices are effective in reducing vibration to a Runner's leg muscles

The SportsBands™ device works using a mechanical damping method (patents pending)

Figure 4



## Log scale Frequency (Hz)

Runner on Tread-mill Test Conditions: Time average: 10 seconds; 0 degree incline

- Machine speed: Speed: 5 Mph; Sensor placed below knee cap
- Band placed 2 inches below knee sensor

SportsBands™ Device is effective in reducing shock and repetitive Vibration in Runner leg muscles OVER the frequency range from 50 Hz to 1200 Hz